

Work Order ID 61250

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August 11, 2010 11:55:01 AM

Item ID: D6101-003

Accept



Setup Start



Revision ID:

Item Name: Saddle Billet, 7075

Stop



Start Date: 8/26/10 Start Qty: 40.00



Cust Item ID:

Required Date: 8/26/10 Req'd Qty: 40.00



Customer:

Reference:

Approvals:

Process Plan: CL

Date: 10/8/11

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6101	Rev B

100



PURCHASING

Purchasing

Memo

0.00

CL 10/8/11

(40)

Purchasing

Issue P/O: 12019

- a) Description: Aluminum billet
- b) 7.875" x 6.250" x 2.00" thick
- c) Tolerance on all dimensions are +0.030"/-0.000"
- d) Grain direction along 7.875" length
- e) Material: 7075-T7351 (QQ-A-250/12)
- f) Material certification required

110



Receive & Inspect for Damage & Mat'l Certs

0.00

10/8/27 (40)

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61250

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August 11, 2010 11:55:01 AM

Item ID:	D6101-003		Accept		Setup	Start	
Revision ID:						Stop	
Item Name:	Saddle Billet, 7075						
Start Date:	8/26/10	Start Qty:	40.00		Cust Item ID:		
Required Date:	8/26/10	Req'd Qty:	40.00		Customer:		
Reference:							
Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 	QC6- Inspect dimensions to drawing	0.00							
QC	Memo	0.00	<i>mf 10/09/02</i>			<i>40</i>	<i>0</i>		
Quality Control	Ensure Material certification comply to Dwg D6101								
130 	Identify as per dwg & Stock Location: <i>MAT</i>	0.00	<i>mf 10/09/02</i>			<i>40</i>	<i>0</i>		
Packaging	Memo	0.00							
Packaging									
140 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									
			<i>10/09/02 JJ</i>						
			<i>mf</i>						
			<i>10-9-02</i>						

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 1

August 11, 2010 11:55:01 AM

Work Order ID: 61250



Parent Item: D6101-003



Parent Item Name: Saddle Billet, 7075

Start Date: 8/26/10

Required Date: 8/26/10

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A: 01.05.04 New Issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P		Purchased		No		110	Each	0.0000	1	40		MF 10-9-2	

7075-T7351 2X6.25X7.875

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

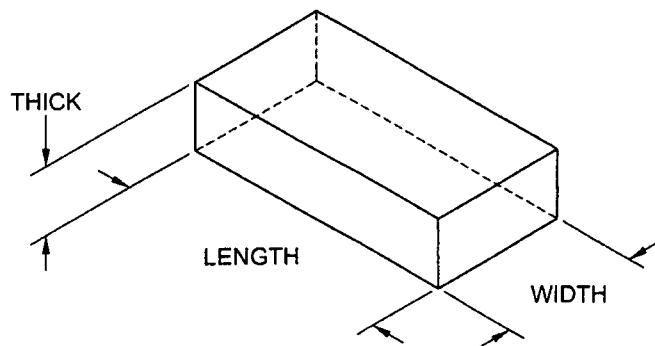
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.



ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length



RELEASED
09/07/15/W

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. C01250
C21018/11

B	ADDED D6101-015/-017, ADD ASTM B209			RF	09.04.23
A	NEW ISSUE			CP	01.03.30
REV.	DESCRIPTION			BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWN	RF				
CHECKED	<u>04</u>	DRAWING NO. D6101			REV. B
MFG. APPR.	<u>04</u>				
APPROVED	<u>04</u>	TITLE SADDLE BILLET, 7075			SHEET 1 OF 1
DE APPR.	<u>04</u>				
DATE	09.04.23				SCALE NTS
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.					



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO12019

Purchase Order Date 6/03/10
PO Print Date 8/11/10

Page Number 1 of 1

Order From :

VC-MET001

METAUX CASTLE
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100
TORONTO, ON M4Y 3A5
CA

Release

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Requisition Nbr	
Vendor Fax	Tax Resale Nbr	10127-2607
Vendor Account Nbr	Terms	Net 30
	Currency	CAD
	FOB	

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6101-001P <i>release 30</i>	7075-T7351 2X6X6.25	10/29/10 Yes	60.00 Each		\$45.1000	\$2,706.00
2	D6101-003P	7075-T7351 2X6.25X7.875	6/03/10 Yes	40.00 Each		\$59.1600	\$2,366.40
2	D6101-003P <i>release 40</i>	7075-T7351 2X6.25X7.875	10/29/10 Yes	70.00 Each		\$59.1600	\$4,141.20
3	D6101-005P	7075-T7351 8.25X5.0X2.5	10/29/10 Yes	75.00 Each		\$61.0000	\$4,575.00
4	D6101-013P	Saddle billet	10/29/10 Yes	20.00 Each		\$125.0000	\$2,500.00
5	D6102-013P	6061-T6 7.0x6.5x2.0	10/29/10 Yes	20.00 Each		\$32.0000	\$640.00

PO Total: \$16,928.60

MATERIAL CERTIFICATION
REQ'D UPON DELIVERY

PO Instructions: REF: P/O 8393

No substitution or deviation without consent.

Certificate of Conformity or Material Certification required when applicable

Change Nbr: 4

Change Date: 8/11/10



Castle Metals®

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:465111

Ship From:	Sold To:	Ship To:	Deliver To:
Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
Date Shipped	F.O.B.	Freight Terms	Carrier
26-AUG-10	ORIGIN	Prepaid	MANITOULIN

Shipment Details	Final Destination Branch - MON
------------------	--------------------------------

Order No	Line No	Item No	Description	
930039	1	6857.MO	2.0000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) X 7.875 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12	
Purchase Order No	Part Number	Ordered Qty	Invoice Qty	
12019	YOUR ITEM NUMBER: D6101-003	40 PCS	40 PCS	
Details				
Delivery No.	Mill	Heat Number	Mech Id	
40544313		456750A9	PCS 40	
		Width (IN)	Length (IN)	Shipped Qty (LBS)
				406.43

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.
Reviewed by Authorized Castle Metals Representative: _____ Date: _____

AM 10/09/02

SHIP TO:

AM CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

SOLD TO:

AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

KAISER
ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4149447

CUSTOMER PO NUMBER: 01-15005		WORK PACKAGE:	CUSTOMER PART NUMBER: 6857 A97075-60		SHIP RUN/LOAD ID: 101432/18		GOVT CONTRACT NUMBER:
KAISER ORDER NO: 1075544	LINE ITEM: 1	SHIP DATE: 11-DEC-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE	
WEIGHT SHIPPED: 5792 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2020668		GAUGE: 2.0000 IN	WDTH: 48.600 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7058/RevA
DPS 4.713/RevAH
G8816100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 694/Rev06
CMMR 025/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 008/RevC
GAMP8 8101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 456514AB Cast 198

Drop 21

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.2 : 73.8 (505 : 509)	63.6 : 64.9 (439 : 447)	11.6 : 11.8

(ASTM E1004)

Conductivity %IACS :	41.2 Min	41.7 Max
(MS/M) :	23.9 Min	24.2 Max

(ASTM E1251)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.21	1.5	0.03	2.4	0.18	5.7	0.03	0.01	0.01	TOT 0.05

Amh
10/08/02

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

8474558927 P.022
10/10/02 10:10 AM

CERTIFIED TEST REPORT

Serial Number
4149447

Lot: 456750A9 Cast 193 Drop 20 Ingot 1

(ASTM E8/B667)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.1 : 73.7 (504 : 508)	62.7 : 63.4 (432 : 437)	11.9 : 12.1

(ASTM E1004)

Conductivity % IACS :	41.8 Min	42.2 Max
(MS/M) :	24.2 Min	24.5 Max

(ASTM E1261)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.22	1.4	0.02	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

Bill Poynor
10/09/02

CASTLE METALS CORP.
DATE RCV'D 10/10/02
IAC 10/10/02
APPROVED BY *SP*

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 252.225-72-1(b), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225-72 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. 18U.S.2001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poynor